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Storage case for goggles

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The present invention relates to storage cases for protective goggles, such as smoke protection goggles, for aircraft flight personnel.

More particularly, the invention concerns a case of this type which comprises a case bottom and at least two doors. These two doors have closure means designed to hold the goggles in the case, between the case bottom and the doors. These doors are articulated on the case bottom between at least two end positions: a closed position in which these doors at least partially cover the goggles, and an open position in which the doors are spaced apart from one another to allow the goggles to be removed from the case.

By virtue of these arrangements, the case is able to store goggles and at least partially protect them when their use is not required.

In preferred embodiments of the invention, recourse may also be had to one and/or other of the following arrangements:

- the closure means are composed of mono-stable hinges, with a stable position of the hinges corresponding to the closed position of the doors and designed to hold the goggles in the case even if the goggles are not held by the case bottom;
- the doors are articulated on the case bottom by means of bi-stable hinges, with a first stable position corresponding to the closed position of the doors and designed to hold the goggles in the case even if they are not held by the case bottom, and a second stable position corresponding to the open position of the doors and designed to avoid

the doors from closing by themselves.

- the case bottom has a shape designed to hold the protective goggles in the case even when the case is open;

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- the case bottom has side walls whose distance from each other is smaller, at least locally, than the width of the goggles;

- 10 - the case comprises two doors which are symmetrical with respect to its center plane corresponding to the bilateral plane of symmetry of the goggles; each door has a closure edge which, in the closed position of the doors, approaches the center
15 plane; this closure edge has at least one indentation allowing the goggles to be gripped when they are placed in the case;

- the closure edge of each door has at least one
20 bottom indentation which, when the goggles are in the case, is situated substantially in line with that part of the goggles intended to cover the nose, this bottom indentation, together with the corresponding bottom indentation of the other
25 door, being designed to allow the goggles to be gripped via that part of the goggles intended to cover the nose, and to allow the goggles to be removed from the case with one hand, and without having first opened the doors;

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- the closure edge of each door has two indentations, namely a top indentation which, together with the corresponding top indentation of the other door, allows a first finger to be placed
35 on an edge of the goggles, and a bottom indentation which, together with the corresponding bottom indentation of the other door, allows a second finger to be placed on another edge of the

goggles, so as to remove the goggles from the case with one hand and without having first opened the doors; and

- 5 - the doors are transparent.

Other aspects, aims and advantages of the invention will become evident from reading the description of one of its embodiments.

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The invention will also be better understood with the help of the drawings, in which:

- 15 - Figure 1 is a schematic and perspective rear view of an illustrative embodiment of the storage case for goggles according to the invention, with the doors open;

- 20 - Figure 2 is a schematic and perspective front view of the embodiment of the case shown in Figure 1, with the doors of the case open;

- 25 - Figure 3 is a view analogous to that in Figure 2, with the goggles in the case and the doors closed.

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In the different figures, the same reference numbers designate identical or similar elements.

30 An illustrative embodiment of the invention is described in detail below.

35 This embodiment concerns a case 1 for storage of protective goggles 2 for aircraft flight personnel. This case 1 is generally placed in an airplane cockpit. The goggles 2 are, for example, smoke protection goggles.

As is shown in Figure 1, this case 1 comprises a case

bottom 3 and two doors 4 and 5. In alternative forms, the case 1 could have a greater number of doors, for example four doors arranged symmetrically with respect to the diagonals, etc. The doors 4, 5, considered from outside the case 1 when the doors 4, 5 are closed, are substantially convex. The doors 4, 5 are transparent; this makes it possible to verify the presence of the goggles 2 in the case 1 and to check the state of the lens part of these goggles 2.

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The case bottom 3 has a substantially rectangular shape, with two side walls 6 and 7, an upper wall 8, and a lower wall 9. These four walls, namely the side walls 6, 7, upper wall 8, and lower wall 9, extend substantially perpendicularly from the case bottom 3 and delimit an open and substantially rectangular face 14.

The case bottom 3 comprises two feet 10. Each foot 10 has a surface 11 which is adjacent to and substantially perpendicular to a side wall 6 or 7. This surface 11 has two holes 12 designed for fixing the case on a support such as a dividing wall in a cockpit, within reach of the flight personnel.

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Each side wall is provided with closure means 13. These closure means 13 are, for example, hinges. Each hinge 13 supports a door 4 or 5 and allows the latter to be opened and closed about an axis Z substantially parallel to one of the small sides of the open face 14. The doors 4, 5 are articulated on the case bottom 3 between at least two end positions: a closed position in which the doors 4, 5 at least partially cover the goggles 2 (see Figure 3), and an open position in which the doors 4, 5 are spaced apart from one another to allow the goggles 2 to be removed from the case 1 (see Figures 1 and 2).

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The hinges 13 are bi-stable. They have a first stable position corresponding to the closed position of the doors (Figure 3). In this position, the closure means 13 are designed to hold the goggles 2 in the case 1 with sufficient force, between the case bottom 3 and the doors 4, 5, even if the goggles are not held on the case bottom 3. The hinges 13 have a second stable position corresponding to the open position of the doors 4, 5. This second stable position is designed designed to avoid the doors 4, 5 from closing by themselves. In this way, the user can place the goggles 2 back in the case 1 with just one hand when the doors 4, 5 are open.

As is shown in Figure 2, the distance e between the side walls 6 and 7 is designed to hold the goggles 2 in the case 1 even when the latter is open. Thus, this distance e is smaller than the dimension of the goggles 2 in width, that is to say parallel to the binocular direction. The case bottom 3 comprises guide surfaces 15 extending from the surfaces 11 to the open face 14 in such a way as to make it easier to insert and lock the side edges 16 of the goggles 2 with sufficient force in the case bottom 3 upon introduction of the goggles 2 into the latter. Thus, a user is able to fit the goggles 2 in the case bottom 3 with one hand, the goggles 2 remaining in position in the latter when the user releases them.

As is shown in Figure 3, the two doors 4 and 5 are symmetrical with respect to the center plane P of the case corresponding to the bilateral plane of symmetry of the goggles.

Each door 4 or 5 has a closure edge 17 which, in the closed position of the doors 4 and 5, approaches the center plane P. This closure edge 17 has a top

indentation 18 and a bottom indentation 19.

5 The top indentation 18 of one door 4, together with the top indentation of the other door 5, allows a first finger to be placed at a point H on one edge of the goggles. When the goggles 2 are in the case 1, the bottom indentation 19 is situated substantially in line with that part of the goggles 2 intended to cover the nose. The bottom indentation 19 of one door 4, together
10 with the bottom indentation of the other door 5 with which it forms a substantially triangular recess, allows a second finger to be placed at a point B on another edge of the goggles 2. Thus, a user is able to grip the goggles, between points B and H, between two
15 fingers, and is able to withdraw the goggles 2 from the case 3 with one hand. As the convexity of the doors 4 and 5 does not oppose this withdrawal, it is not necessary to have first opened the doors 4 and 5.

20 The substantially triangular recess formed by the bottom indentations 19, when the doors 4 and 5 are closed, is designed to likewise allow the goggles 2 to be gripped via that part of the goggles 2 intended to cover the nose. This arrangement is especially designed
25 for masks with detachable or removable goggles. As has been explained above, the goggles 2 can be removed from the case 3 with one hand, and without having first opened the doors 4, 5.

30 The case 1 according to the invention permits storage of several types of smoke protection goggles, while guaranteeing immediate availability of the stored goggles 2. Thus, the goggles stored in the case according to the invention can be fitted on a user's
35 head in less than 15 seconds, as is recommended by legislation.